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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,812	09/12/2005	Yoshihiro Takiguchi	046124-5354	4672

55694 7590 06/30/2006

DRINKER BIDDLE & REATH (DC)  
1500 K STREET, N.W.  
SUITE 1100  
WASHINGTON, DC 20005-1209

EXAMINER
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PAK, SUNG H

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/522,812	Applicant(s) TAKIGUCHI, YOSHIHIRO	
	Examiner Sung H. Pak	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/25/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Information Disclosure Statement*

Information disclosure statement received on 4/25/2005 has been considered.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-5, 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0348611 (EP'611).

EP'611 reference discloses an optical device with all the limitations set forth in the claims, including: an optical fiber having an end face that serves as a light exiting surface ('5' Fig. 3); a photoelectron emitting part, formed on the end face and emitting photoelectrons based on light exiting from the end face ('4' + '9' Fig. 1; or '4' Fig. 3; abstract);

wherein the photoelectron emitting part is formed only on the core part of the end face ('10' Fig. 1- the opening '10' qualifies as the 'emitting part' because it allows the electrons to be emitted out of the fiber optic photocathode component of Fig. 1);

further comprising a light shielding cladding, disposed on the surface of the optical fiber in order to prevent leakage of light from the optical fiber and intrusion of external light into the optical fiber ('3' + '12' Fig. 3; column 5 lines 1-2); wherein the optical fiber includes another

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end face that serves as a light incidence surface (Fig. 5); further comprising an optical fiber connector ('21' Fig. 5) which is mounted to the other end face;

wherein a metal layer is positioned between the end face and the photoelectron emitting part ('4' Fig. 1- column 4 lines 6-15; the 'emitting part' being '9').

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0348611 (EP'611) in view of JP 06-088747 (JP'747).

EP'611 reference discloses an optical device with limitations set forth in the claims as discussed above, except it does not explicitly teach the use of a cooling part lowering the temperature of the photoelectron emitting part.

On the other hand, the use of a cooling part lowering the temperature of the photoelectron emitting part is known in the art as shown by JP'747 (Fig. 1, abstract). Such use of a cooling part is considered advantageous and desirable in the art because it allows for a more efficient operation of the optical device and increases reliability of the device. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of EP'611 to have a cooling part as taught by JP'747.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0348611 (EP'611) in view of JP 09-061678 (JP'678).

EP'611 discloses an optical device with limitations set forth in the claims as discussed above, except it does not explicitly teach the use of a grating element disposed in the core part of the optical fiber.

On the other hand, JP'678 explicitly teaches the use of a grating element disposed on the core of the optical fiber (Figs. 6-7). Such arrangement is considered advantageous and desirable in the art because it allows for transmission of only selective wavelength light to the fiber ends, which obviates the need for a light source having a particular wavelength for effective photoemission. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of EP'611 to have a grating element disposed in the core of the optical fiber as taught by JP'678.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, consisting of a stylized 'S' followed by a horizontal line and a long, sweeping curve to the right.

Sung H. Pak  
Primary Patent Examiner  
Art Unit 2874